

Docket No.: 7560-NES

**OFFICIAL****REMARKS**

This in reply to the Office Action mailed on October 5, 2004 ("Office Action").

Claims 1-59 are currently pending.

Claims 1-14 and 41-50 are rejected under 35 U.S.C. § 112 second paragraph.

Claims 1 and 15-16 are rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 4,396,499 ("McCoy").

Claims 1 and 15-16 are rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 5,648,409 ("Arora").

Claims 28 and 29 are rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 4,396,499 ("McCoy").

Claims 2 and 3 are rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,648,409 ("Arora").

Claims 17-27 and 30-40 are objected to as being dependent on a rejected base claim.

Claims 41-50 would be allowable if rewritten or amended to overcome the rejections under 35 U.S.C. § 112 second paragraph.

Claims 51-59 are allowed.

Claims 1 and 41 are amended to particularly point out and distinctly claim subject matter which Applicants regard as their invention.

Claims 2, 3, 15, 16, 28, 29, 41-45, 51, 52, 54 and 55 are amended to employ terminology consistent with the independent claims.

No new matter is added by this amendment.

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**OFFICIAL****DISCUSSION****The Rejection of Claims 1-14 and 41-50 under 35 U.S.C. § 112 Second Paragraph**

Claims 1-14 and 41-50 are rejected under 35 U.S.C. § 112 second paragraph. In particular, the Examiner states:

In claim 1 sets forth structures, which may include ethyleneoxy groups and propyleneoxy groups, defining the repeating groups with the subscript "n". The claim further sets forth the ratio of ethyleneoxy groups to propyleneoxy groups is 70:30. It is unclear how the ratio can be 70:30 when R is CH<sub>3</sub> and n is a finite value.

In claim 1, the triglycidyl ether of aliphatic triols and tetraglycidyl ethers of aliphatic polyols suggest the polymer compositions include nonlinear polymers.

In claim 3 it is unclear how the further capping monomer differs from the amines set forth in claim 1.

In claim 41, R, R<sub>2</sub>, R<sub>3</sub>, R<sub>6</sub> and R<sub>7</sub> defining divalent groups should refer to said groups as "alkylene groups" rather than "alkyl groups".

Furthermore, claim 41 sets forth at least one amine having two reactive hydrogens having chemical structures wherein said structures may contain reactive hydrogens and suggest compositions resulting in non-linear polymers. See at least the hydroxyl, halo, and cyano substituted groups such as R, R<sub>2</sub>, R<sub>3</sub> and Z. It is unclear what is intended by the characterization "amine having two reactive hydrogens" and the scope of the compounds intended therefrom.

Office Action at pages 2-3.

Applicants respectfully traverse this rejection.

Applicants have amended claim 1 to remove the recitation of a linear polymer and remove recitation of a 70:30 ratio of ethyleneoxy to propyleneoxy groups.

With regard to claim 3, please see the specification at page 3, lines 17-21 which discusses "capping" (i.e. reacting any remaining unreacted epoxy groups in the polymer of claim 1) with an amine or amine-containing group having one or two reactive amino hydrogen atoms.

Applicants have amended claim 41 to remove the recitation of a linear polymer, to refer to R<sub>2</sub>, R<sub>3</sub>, R<sub>6</sub> and R<sub>7</sub> as alkylene groups and to define the group R-Z as alkyl or substituted alkyl.

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Applicants have further amended claim 41 to recite a first amine-containing group having two reactive amino hydrogens. Support for this amendment is found in the specification at page 4, lines 21-23.

Applicants respectfully assert that amended claims 1 and 41 particularly point out and distinctly claim subject matter which Applicants regard as their invention and therefore respectfully request withdrawal of the rejection of claims 1-14 and 41-50 under 35 U.S.C. § 112 second paragraph.

The Rejection of Claims 1 and 15-16 under 35 U.S.C. § 102(b) over U.S. Patent No. 4,396,499

Claims 1 and 15-16 are rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 4,396,499 ("McCoy"). In particular, the Examiner states:

McCoy et al (Example IV) discloses the polymeric reaction product of Jeffamine® M-360 with EPON® 828. Although the claims set forth an amine capping group, said amine capping group is indistinct from the Jeffamine® M-360 as the first amine-containing monomer.

Office Action at page 3.

Applicants respectfully traverse this rejection.

Applicants respectfully point out that the demulsifiers disclosed by McCoy are prepared from polyoxyalkylenediamines having four reactive amino hydrogen atoms as shown in the structure at col. 2, line 20. In contrast the polymers of this invention are derived from amines having two reactive amino hydrogen atoms.

Accordingly, as McCoy discloses different polymers than the polymers of this invention, Applicants respectfully request withdrawal of the rejection of claims 1 and 15-16 under 35 U.S.C. § 102(b) over McCoy.

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The Rejection of Claims 1 and 15-16 under 35 U.S.C. § 102(b) over U.S. Patent No. 5,648,409

Claims 1 and 15-16 are rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 5,648,409 ("Arora"). In particular, the Examiner states:

Arora et al (examples, claims; column 9, lines 39 et seq; column 13, lines 9-14) discloses the polymeric reaction product of Jeffamine® M-2070 (ethylene oxide/propylene oxide ratio = 70/30) with a polyepoxide. Although the claims set forth an amine capping group, said amine capping group is indistinct from the Jeffamine® M-2070 as the first amine capping monomer.

Office Action at page 3.

Applicants respectfully traverse this rejection.

Applicants respectfully assert that Arora discloses an epoxy resin composition that is the reaction product of (a) an epoxy resin, (b) a polyhydric phenol and (c) an amine-epoxy adduct comprising the addition product of reactants comprising an aromatic polyepoxide and a polyoxyalkyleneamine. Col. 2, lines 42-52. Structures and representative examples of aromatic polyepoxides, epoxy resins, and polyhydric phenols are shown at col. 4, line 51 to col. 6, line 64.

Unlike the resins disclosed by Arora which are prepared from aromatic polyepoxides and polyhydric phenols, the polymers of this invention are derived from glycidyl ether compounds selected from the group consisting of diglycidyl ethers of aliphatic diols, triglycidyl ethers of aliphatic triols, and tetraglycidyl ethers of aliphatic polyols and do not include polyhydric phenols. See, for example, claims 1 and 41 and specification at page 7, line 33 to page 9, line 14.

Accordingly, as Arora discloses different polymers than the polymers of this invention, Applicants respectfully request withdrawal of the rejection of claims 1 and 15-16 under 35 U.S.C. § 102(b) over Arora.

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The Rejection of Claims 28 and 29 under 35 U.S.C. § 103(a) over U.S. Patent No. 4,396,499

Claims 28 and 29 are rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 4,396,499 ("McCoy"). In particular, the Examiner states:

... McCoy et al discloses polymeric reaction products as set forth in the anticipation rejection above.

McCoy et al differs from claims 28 and 29 wherein the reactive epoxide is an epoxidized olefin having two epoxide groups.

McCoy et al (column 2, lines 1-9 and 25-34) teaches the epoxides may include diepoxides having terminal epoxide groups linked by an aliphatic group. Said structure reads on diepoxides derived from epoxidizing a diolefin. Since it is the product under consideration rather than the method said product is made, claims 28 and 29 are indistinct from the diepoxides as characterized in column 2, lines 1-9 and 25-34, of the McCoy et al reference.

It would have been obvious to one having ordinary skill in the art at the time of applicants' invention to employ diepoxides as taught in the McCoy et al reference as functional equivalents.

Office Action at pages 4-5.

Applicants respectfully traverse this rejection.

As discussed above, McCoy discloses demulsifiers prepared from polyoxyalkylenediamines having four reactive amino hydrogen atoms while the polymers of this invention are derived from amines having two reactive amino hydrogen atoms. In addition, McCoy does not disclose capping of the polymers as recited in claim 29 and described in the specification at page 10, line 9 to page 11, line 7. Accordingly, as McCoy does not teach or suggest the equivalence of polymers prepared from polyoxyalkylenediamines, which possess 4 reactive amino hydrogen atoms and the presently claimed amines containing two reactive hydrogen atoms or capping the resulting polymers, Applicants respectfully request withdrawal of the rejection of claims 28 and 29 under 35 U.S.C. § 103(a) over McCoy.

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The Rejection of Claims 2 and 3 under 35 U.S.C. § 103(a) over U.S. Patent No. 5,648,409

Claims 2 and 3 are rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,648,409 ("Arora"). In particular, the Examiner states:

Arora et al differs from claims 2 and 3 in the incorporation of a second amine-containing monomer having two reactive hydrogens and a tertiary amine group.

Arora et al (column 13, lines 9-14) teaches useful accelerators for amine curing agents including tertiary amines. It would have been obvious to one having ordinary skill in the art at the time of applicants' invention to employ further amines having tertiary amine groups as taught in the Arora et al reference as functional equivalents.

Office Action at page 5.

Applicants respectfully traverse this rejection.

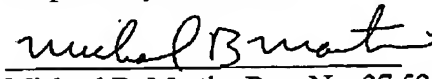
As discussed above, Arora discloses fundamentally different polymers for use in an unrelated application, namely epoxide resins incorporating aromatic polyepoxides and polyhydric phenols for use as components in coating compositions. See col. 1 lines 12-22. Applicants further respectfully point out that the tertiary amine curing accelerator, N,N'-bis(dimethyl-amino-propyl) urea, a compound of formula  $(\text{CH}_3)_2\text{N}-(\text{CH}_2)_3-\text{NH}(\text{CO})-\text{NH}-(\text{CH}_2)_3-\text{N}(\text{CH}_3)_2$ , disclosed at col. 13, lines 13-14 does not contain any reactive amino hydrogen atoms and therefore is incapable of reacting with the glycidyl ether compound of claim 1. Accordingly, as Arora discloses different polymer compositions and an unreactive tertiary amine that could not be incorporated into the polymer of this invention, Applicants respectfully request withdrawal of the rejection of claims 2 and 3 under 35 U.S.C. § 103(a) over Arora.

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**OFFICIAL****CONCLUSION**

In view of the foregoing amendment and remarks, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. §§ 112, second paragraph, 102(b) and 103(a) and respectfully assert that this application is in condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully Submitted,

  
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